REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Claims 1, 3 and 5-15 are pending. Claims 1, 3 and 5-15 stand rejected.

Rejections Under 35 U.S.C. § 103(a)

Claims 1, 3 and 5-15 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,898,670 of Hoebeke et al. ("Hoebeke") in view of "ATM Technology Overview" by Thorne ("Thorne").

The Examiner has rejected claims 1, 3, and 5-15 under 35 U.S.C. § 103 as being unpatentable over Hoebeke in view of Thorne. The Examiner has stated that

> As such to claim 1,for step (a) Hoebeke discloses detecting a change from a first bandwidth connection to a second bandwidth connection by monitoring DMAX. As various source inputs are multiplexed over a common channel, examiner notes a plurality of lines in light of applicant's specification, see e.g., column 4, lines 37-67. With respect to calculating the second bandwidth connection based on how many plurality of lines are broken, see e.g., column 6, lines 20-31. <u>In particular, MMU monitors the output flow and is thus aware of potential changes such as broken lines since the bandwidth changes (i.e., examiner interprets broken lines as the available bandwidth (BW A) in view of applicant's specification, see e.g., applicant's specification at page 8, lines 5-15).</u> In other words, applicant teaches monitoring the available bandwidth and not necessarily the actual number of lines, working or broken. Providing a second bandwidth via a feedback loop to a transmit rate selector is taught as part of signal OFRI. Each ISD is responsible for computing bandwidth transmissions. As such, each ISN has an associated queue in reference to queuing data cells.

(p. 3-4, Office Action 092204) (Emphasis added)

Applicants respectfully submit, however, that Hoebeke does not disclose the limitation of "calculating the second bandwidth based upon how many of the plurality of lines are broken". The Examiner has pointed out correctly that applicants disclose that the available variable bandwidth could decrease for many reasons including a broken line.

Applicants cannot agree with the Examiner's use of this teaching to assert that Hoebeke, in teaching that the MMU in monitoring the available output capacity is using a number of broken lines to calculate a second bandwidth.

Hoebeke discloses that

The multiplexing arrangement A of the figure includes a multiplexing unit MUX, N input shaping devices, ISD1, . . . , ISDI, . . . , ISDN, a master monitoring unit MMU, and an output buffer OB. Each input shaping device has a similar structure and is thus built up from the functional blocks which are drawn in the figure only for ISDI: therein, IBI represents an input buffer, IBMI represents an input buffer monitoring unit, and IRMI is an input rate measuring unit. The multiplexing arrangement A further is provided with N inputs, AI1, . . . , AII, . . . , AIN, whereto N sources, S1, . . . , SI, . . . , SN, are coupled respectively, and an output AO which is coupled to a destination node DN.

Inside the multiplexing arrangement A, each input AI1. . . , AII, . . . , AIN is coupled to a corresponding input M1u, . . . , MII, . . . MIN of the multiplexing unit MUX via a respective one of the input shaping devices, ISD1, . . . , ISDI, . . . ISDN. More particularly, for ISDI the arrangement input AII is coupled to the multiplexer input MII via the cascade connection of the input rate measuring unit IRMI and the input buffer IBI, the structure of the other input shaping devices being similar as already mentioned earlier. The multiplexer output MO, on the other hand, is coupled to the arrangement output AO via the output buffer OB. A feedback connection OFRI is coupled between an output of the destination node DN and a feedback input FI of the master monitoring unit MMU. In the figure however, only a part of this connection inside the multiplexing arrangement A is drawn. N terminals of the master monitoring unit MMU are further connected via bi-directional links to terminals of the respective input buffer monitoring units IBM1, . . . , IBMI, . . . , IBMN of which only IBMI is shown.

(Hoebeke, Col. 4, lines 37-67). Hoebeke also discloses that

The multiplexing arrangement A of the figure is dedicated to support the ABR (Available Bit Rate) service in an ATM (Asynchronous Transfer Mode) network. This ABR service is a class of ATM transmission of LAN (Local Area Network) or other bursty, delay insensitive data. Since low cell loss and a minimum cell rate are guaranteed, ABR is a service which provides reliable transport of bursty data.

(Hoebeke, Col. 3, Lines 55-61) Hoebeke also discloses that

It has to be noticed that, although the above described embodiment of a multiplexing arrangement A is dedicated to support the ABR (Available Bit Rate) service in ATM (Asynchronous Transfer Mode) networks, the present invention is not restricted to this field of application. Indeed, it is clear to a person skilled in the art how to adapt the above described arrangement A to be applicable e.g. to the VBR+ (Variable Bit Rate Plus) class, which is another class of service that is under consideration by the ATM Forum. Like ABR, the VBR+ service has a closed-loop feedback control system but additional guarantees with respect to delay are provided too.

(Hoebeke, Col. 6 Line 63 to Col. 7 Line 8) Hoebeke also discloses that

via the feedback input FI thereof. Whenever the available output flow capacity DMAX changes, the master monitoring unit MMU is aware thereof and immediately redistributes the new available capacity, i.e. the minimum of the multiplexer throughput capacity and

> the new available output bandwidth DMAX, amongst the input flows IF1, . . . , IFI, . . . , IFN by calculating a new set of maximum input buffer reading rates B1MAX, . . . , BIMAX, BNMAX.
>
> The multiplexer throughput capacity and the available output flow bandwidth DMAX are thus never exceeded by the aggregate input flow. Nevertheless, an output buffer OB is coupled between the multiplexer output MO and the arrangement output AO because the input buffers IB1, . . . , IBI, . . . , IBN may not be properly phased.

(Hoebeke, Col. 6, Lines 20-36)

Hoebeke includes no teaching of using the number of broken lines to calculate the second bandwidth. Applicants respectfully submit that the Examiner has misconstrued both the content and breadth of teaching of Hoebeke and requests the Examiner to reconsider his use of Hoebeke in this manner.

Moreover, the combination with Thorne does not remedy the deficiencies of Hoebeke. Thorne discloses that

> ATM was designed to support a lot of different applications types, and these can be broken down into 4 service classes:
>
> - CBR- constant bit rate where there is a strict timing relationship between the two ends of the connection. An example of this would be constant bit rate video or audio.
> - VBR- variable bit rate also has a strict timing relationship between the two end points, but the bit rate would vary. This could for example be more complex video coding.
> - ABR- available bit rate, where control OAM cells known as RM cells are used to continually vary the allowed bit rate. The timing relationship no longer exists, and this service class is about maximizing network usage for both the user and network operator in a controlled way.
> - UBR- unspecified bit rate, where the user is given very little or no information about what bit rate can be supported. This is close to a best efforts service.
>
> The parameters which need to be specified depend on the service class e.g. for CBR the mean rate (which is also the peak) is all that needs to be specified.

(Thorne, section 2.3.6.).

It is respectfully submitted that in view of the arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

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